

L Number	Hits	Search Text	DB	Time stamp
1	1	"5800857" and (ruthenium with (ruthenium adj oxide))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/03/27 20:27
2	8	"5230712" and (ruthenium with (ruthenium adj oxide))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/03/27 20:33
3	8	"5230712" and (ruthenium same (ruthenium adj oxide))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/03/27 20:36
4	1	"3818118" and (ruthenium same (ruthenium adj oxide))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/03/27 20:38
5	3	"6284655" and (ruthenium same (ruthenium adj oxide))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/03/27 20:42
6	2	"6281142" and (ruthenium same (ruthenium adj oxide))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/03/27 20:48
7	2	"6271077" and (ruthenium same (ruthenium adj oxide))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/03/27 21:05
8	2	"6204172" and (ruthenium same (ruthenium adj oxide))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/03/27 21:07
9	1	"6174337" and (ruthenium same (ruthenium adj oxide))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/03/27 21:09
10	1	"6120846" and (ruthenium same (ruthenium adj oxide))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/03/27 21:11
11	1	"6096391" and (ruthenium same (ruthenium adj oxide))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/03/27 21:12
12	1	"6010744" and (ruthenium same (ruthenium adj oxide))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/03/27 21:13
13	123	convert\$8 same (ruthenium same (ruthenium adj oxide))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/03/27 22:33
14	42	convert\$8 same (ruthenium same (ruthenium adj dioxide))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/03/27 22:50

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LI ANSWER 2 OF 3 WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD  
AN 1989-312911 [43] WPIX  
DNC C1989-138597  
TI Recovery of ruthenium from waste resistors - by treatment with aq. nitric acid soln. and then with fused salts to obtain soluble ruthenium salt.  
DC L03 M25  
PA (TANI) TANAKA KIKINZOKU KOGYO KK  
CYC 1  
PI JP 01230730 A 19890914 (198943)\* 2p  
ADT JP 01230730 A JP 1988-55792 19880309  
PRAI JP 1988-55792 19880309  
IC C22B007-00; C22B011-00  
AB JP 01230730 A UPAB: 19930923  
Waste Ru resistor body, which consists of a metal oxide substrate and a mixt. of RuO2 and metal oxides (glass) coated on the substrate, is treated with aq. HNO3 soln. to flake the mixt. from the substrate. The flakes of the mixt. are then treated with fused salts to obtain a soluble Ru salt.  
ADVANTAGE - Recovery is with high efficiency and carried out in a short time.  
FS CPI  
FA AB  
MC CPI: L03-B01; M25-E; M25-G28

L1 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2002 ACS  
AN 1990:482467 HCAPLUS  
DN 113:82467

[ TI Recovery of ruthenium from spent electric resistors ]

IN Shoji, Toru  
PA Tanaka Noble Metal Industrial Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 2 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM C22B011-00  
ICS C22B007-00  
CC 54-2 (Extractive Metallurgy)  
Section cross-reference(s): 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 01230730	A2	19890914	JP 1988-55792	19880309 <--
AB	{ Spent elec. resistors with a Ru oxide-glass mixed coating are treated with aq. HNO3 to spall off the coating, which is stripped with molten salts to recover Ru. Thus, 500 g .alpha.-Al2O3 substrate coated with a RuO2-lead glass mixt. was treated 1 h with 12N HNO3 to spall off the coating, which was then contacted with a mixt. contg. 100 g KOH and 12 g KNO3 at 800.degree. to recover Ru at 77% yield.				
ST	ruthenium recovery elec resistor; nitric acid ruthenium recovery; potassium hydroxide ruthenium recovery; nitrate potassium ruthenium recovery				
IT	Electric resistors (spent, ruthenium recovery from, by spalling and stripping)				
IT	7440-18-8P, Ruthenium, preparation RL: PUR (Purification or recovery); PREP (Preparation) (recovery of, from spent elec. resistors, by spalling and stripping)				
IT	7697-37-2, Nitric acid, uses and miscellaneous RL: USES (Uses) (spalling with, of ruthenium oxide coatings from spent elec. resistors)				
IT	1310-58-3, Potassium hydroxide (KOH), uses and miscellaneous RL: USES (Uses) (stripping with aq. potassium nitrate contg., of ruthenium, from elec.				

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resistor coatings)

IT 7757-79-1, Nitric acid potassium salt, uses and miscellaneous

RL: USES (Uses)

(stripping with aq., of ruthenium, from elec. resistor coatings)

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L2 ANSWER 2 OF 3 WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD  
AN 1983-847823 [51] WPIX  
DNC C1983-124323  
TI [Recovery of ruthenium oxide coating from electrical device - by redn. to ruthenium,] and treatment with alkaline soln. contg. chlorine or sodium chlorate.

DC M25  
PA (TNAK) TANAKA KINZOKU KOGYO KK  
CYC 1  
PI JP 58194745 A 19831112 (198351)\* 3p  
JP 03021490 B 19910322 (199116)  
ADT JP 03021490 B JP 1982-75653 19820506  
PRAI JP 1982-75653 19820506  
IC C01G055-00; C22B011-00; C22B061-00  
AB JP 58194745 A UPAB: 19930925

Treatment is described of a corrosion-protected electric device coated with ruthenium oxide or a mixed crystal containing ruthenium oxide to recover the oxide.

[The methd comprises reducing ruthenium oxide or a mixed crystal containing ruthenium oxide deposited on the electric device to obtain metallic ruthenium,] treating the metallic ruthenium with an alkali solution contains Cl<sub>2</sub> or sodium chlorate to convert the metallic ruthenium to alkaline metal ruthenate M<sup>+</sup> = monovalent alkali metal; M<sub>2</sub><sup>+</sup> and dissolving out the ruthenate in the alkaline soln. to remove it from the device and recover ruthenium oxide as ruthenate.

[In an example, ruthenium oxide deposited on an alumina body was reduced with H<sub>2</sub> at 600 deg.C. to obtain metallic ruthenium.] The reduced metallic ruthenium was immersed in a KOH soln. containing potassium chlorate, and dissolved out as potassium ruthenate in the soln.

0/1

FS CPI  
FA AB  
MC CPI: M25-E; M25-G28

L2 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2002 ACS  
AN 1984:88100 HCAPLUS  
DN 100:88100  
TI Recovery of ruthenium  
PA Tanaka Noble Metal Industrial Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 3 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC C01G055-00; C22B061-00  
CC 49-5 (Industrial Inorganic Chemicals)  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 58194745	A2	19831112	JP 1982-75653	19820506 <--
	JP 03021490	B4	19910322		

AB The RuO<sub>2</sub> coating on corrosion-resistant ceramics or metals is recovered. Thus, 60 pieces of 1 .times. 10 .times. 10 mm Ti plates coated with RuO<sub>2</sub> was reduced at 500.degree. for 20 min in a H<sub>2</sub> atm., and 10 pieces each were stirred in a mixt. of 80 mL 30% NaOH and 10 mL aq. NaClO of 12% available Cl for 2 h. Cl<sub>2</sub> was injected into the soln. at 80.degree., the RuO<sub>4</sub> was absorbed in aq. HCl, and the latter was evapd. to dryness to give 1.4 g RuCl<sub>3</sub>.

ST ruthenium chloride recovery; oxide ruthenium removal

IT 7681-52-9

RL: RCT (Reactant)  
(leaching by, of ruthenium plating)

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IT 10049-08-8P

RL: PREP (Preparation)

(recovery of, in ruthenium oxide-coated plates)

IT 12036-10-1

RL: USES (Uses)

(removal of coating of, from plates, hydrogen redn. and hypochlorite  
leaching in)